CLAIMS

I claim:

1. A liquid pump for use with an electronic component cooling system comprising:

a housing;

a DC brushless spindle-motor mounted to said housing, said motor comprising an at least one rare-earth magnet for rotating an outer hub around a stationary shaft;

an impeller rotationally constrained to said hub, said impeller contained within said housing;

said housing having a fluid inlet for receiving a supply of lower pressure fluid and for delivering said supply of lower pressure fluid to said impeller, wherein rotation of said impeller transforms said supply of lower pressure fluid to a supply of higher pressure fluid; and

said housing having a fluid exit for dispensing said supply of higher pressure fluid.

2. The liquid pump of claim 1, wherein said impeller may axially float in relation to said hub.

3. The liquid pump of claim 1, wherein said impeller is a centrifugal impeller.

4. The liquid pump of claim 1, wherein said impeller is a turbine impeller.

5. The liquid pump of claim 1, wherein said at least one rare-earth magnet is made from neodymium-iron-boron.

6. The liquid pump of claim 1, wherein said at least one rare-earth magnet is made from samarium-cobalt.

7. The liquid pump of claim 1, wherein said spindle-motor is capable of speeds over 3600 rotations per minute.

8. The liquid pump of claim 1, wherein said spindle-motor has an output less than 1/5 horsepower.

9. The liquid pump of claim 1, wherein said spindle-motor creates less than 2000 milliliters per minute of flow.

10. The liquid pump of claim 1, wherein said spindle-motor contains at least one magnetic seal between said stationary shaft and said hub.

11. The liquid pump of claim 1, wherein said spindle-motor contains a magnetic bearing.

12. A fluid pump for use within a liquid cooling system comprising:

an enclosure;

a DC brushless motor comprised of a stationary spindle, an at least one rare-earth magnet, and a hub for rotating about said stationary spindle, said stationary spindle fixed to said enclosure;

an impeller disk rotatably constrained to said hub of said motor;

said enclosure for housing said impeller disk including an inlet for providing a low pressure supply of fluid to said impeller disk;

wherein rotation of said impeller disk transforms said low pressure supply of fluid to a higher pressure supply of fluid; and

an exit in said housing for discharging said supply of higher pressure fluid.

13. The fluid pump of claim 12, wherein said inlet is fluidly connected to a liquid thermal management unit.

14. The fluid pump of claim 12, wherein said liquid cooling system is a spray cooling liquid cooling system.

15. The fluid pump of claim 12, wherein said exit is fluidly connected to a heat exchanger of said liquid cooling system.

16. The fluid pump of claim 12, wherein said impeller disk is a centrifugal impeller.

17. The fluid pump of claim 12, wherein said impeller disk is a turbine impeller.

18. The fluid pump of claim 12, wherein said at least one rare-earth magnet is constructed from neodymium-iron-boron.

19. The fluid pump of claim 12, wherein said at least one rare-earth magnet is constructed from samarium-cobalt.

20. The fluid pump of claim 12, wherein said spindle-motor is capable of speeds over 3600 rotations per minute.

21. The fluid pump of claim 12, wherein said spindle-motor contains at least one magnetic seal.

22. The fluid pump of claim 21, wherein said at least one magnetic seal contains a dielectric cooling fluid used with said liquid cooling system.

23. The fluid pump of claim 12, wherein said spindle-motor contains a magnetic bearing.

24. The fluid pump of claim 12, wherein said spindle-motor has an output less than 1/5 horsepower.

25. The fluid pump of claim 12, wherein said spindle-motor creates less than 2000 milliliters per minute of flow.